C. Z Factor Adjustment Criteria

Pacific and GTEC each mentioned in their respective testimonies some but not all of the criteria for determining Z factor treatment of any event. The following list, however, includes all the Z factor adjustment criteria put forth by the Commission. To summarize, the Commission stated in D.89-10-031 (issued after the Phase II of the NRF proceeding) that events necessitating Z factor adjustment must have the following characteristics:

1. They are clearly beyond the LEC's management's control (page 180).
2. They are external events which disproportionately impact the utility's costs (page 180).
3. Their impact is not captured in the GNPPI (page 181).
4. Their impact must be significant when compared to the overall costs of the utility (page 182).
5. Their impact can be determined with reasonable certainty and minimal controversy (page 236).

DRA believes that the expenses related to an event which might be considered for Z factor adjustment by this Commission must meet all of these criteria. Otherwise, the Commission is obligated under NRF to dismiss the utility's request for Z factor revenue recovery.

1) Criterion #1: Management Control Over Costs

If the Commission were to adopt SFAS No. 106's accrual accounting for ratemaking purposes, then it could be argued that Pacific's and GTEC's management would have no control in the decision to prefund PBOPs and should therefore be able to recover the costs associated with such change in accounting as allowed by the language of D.89-10-031. DRA acknowledges that the

Commission's actions could qualify as an exogenous event. Nevertheless, DRA strongly holds that, even though the Commission's action would be an exogenous factor, PBOPs costs will always remain completely under management's control.

PBOPs expenses are a function of many factors. They depend, for example, on the number of employees a company has, the kind and level of medical coverage made available to those employees after retirement, the amount of cash available from other sources, the funding vehicle, etc. Management has direct control over each of these aspects. For example, management can choose a bargaining position in negotiations with the labor unions, and use PBOPs levels as concessions in the attempts to sign a contract with the employees. It can select the best funding vehicle, such as collectively-bargained VEBAs, to fund PBOPs. It can judge the appropriate benefits level required to attract and retain good employees. It may decide to save these expenses by hiring consultants to perform certain tasks. It can pare down its employement level, or increase it as it sees fit. Indeed, the Commission should look at PBOPs costs just like any other labor costs under NRF: they are under management's discretion and control; therefore, they should not recieve Z factor recovery.

In the past, DRA has observed management's control over PBOPs expenses at work in the operations of both Pacific and GTEC. First, GTEC has purchased Contel Telephone, greatly increasing its market power in the US telecommunications industry. As positions are found to be duplicated due to the merger, staff cuts may follow. At the same time, GTEC is undergoing some downsizing within its own organization (e.g., see Appendix 7 regarding Winning Strategy I and II). Pacific, meanwhile, recently announced a five-year plan to reduce its workforce by thousands of employees (See Appendix 7).

Another example of the controlability of PBOPs costs is Pacific's new PBOPs plan for its employees. Under the new plan, Pacific was able to significantly reduce its PBOPs expenses (See Confidential Appendix 8). Moreover, either utility's PBOPs plans may continue to be modified. Indeed, as stated in Pacific

Telesis' annual report to the SEC, "The Corporation [Pacific Telesis] reserves the right to amend or terminate these [PBOP] benefit plans."[41]

2) Criterion #2: Cost Change is Disproportionate

No major changes to the economic costs of providing PBOPs have occurred since the beginning of NRF except for some significant management decisions that have clearly shown Pacific's and GTEC's ability to control PBOPs costs. Furthermore, the cost increases associated with SFAS No. 106 itself are not economic in nature. Rather, they reflect accounting entries for costs and obligations which already existed at the time of NRF, and which will be eventually paid one way or another. The Commission has already granted rate relief for PBOPs in its NRF start-up revenue requirement decision, D.89-12-048, based on the recorded PAYGO expenses. The cost changes involved with this accounting switch have nothing to do with exogenous economic changes to PBOPs, or to Commission-mandated increases in employee levels. In other words, there is no cash flow impact on Pacific or GTEC.

3) Criteria #3: Cost Captured in the GNP-PI

Appendix 11 shows that the "economywide inflation factor", the GNPPI, referred to in D.89-10-031, does have health care, dental care, and life insurance components. Thus the Price Cap Formula under the NRF includes an allowance for increases in retired and active employee medical costs. This constitutes some degree of rate recovery under the Price Cap Formula. The implication is that double recovery in revenues will occur if this Commission adopts SFAS No. 106 for ratemaking purposes.

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41. Edison's 1990 Annual Report states that it's PBOPs plans "may be amended or changed periodically."

As of the time of the release of this testimony, DRA has not had sufficient time, resources, or access to GTEC's GNP-PI analyses and workpapers to quantify the future impact of the implementation of SFAS No. 106 on the GNP-PI. This Commission has established a clear precedent (AB.475 and D.90-11-052) for not permitting utilities to use proprietary or confidential sources to circumvent verification and discovery by DRA. In this proceeding GTEC is using a proprietary model, whose reliability has not been independently verified, to support testimony regarding the quantification of Z Factor treatment. DRA recommends that any testimony and conclusions that rely upon such unvalidated sources not be given any weight unless thoroughly verified for accuracy and reliability by the DRA. At the time of this testimony, GTEC had not provided DRA with access to GTEC's proprietary model and supporting data bases.

4) Criterion #4: The Cost Change is Significant

Criteria # 4 is not satisfied. Though the change in "accounting" costs is significant when compared to the LEC's other accounting entries, there are no significant changes to the utilities' economic costs. The economic costs are determined by the labor contracts and employee handbooks which reflect the employer's legal obligation and the understanding between labor and management on how PBOPs are earned. SFAS No. 106 has no impact on these contracts or obligations.

5) Criterion #5: Cost is Uncertain and Controversial

To illustrate how the calculation of this Z factor adjustment might be done, DRA submits the following excerpt from the Prepared Testimony of John Bertko, pages 8-9, which discusses the actuarial calculations performed for Pacific to estimate the PBOPs prefunding costs:

"...I worked with Pacific's actuaries to review all of the critical components of their calculations. These components included the following:

- o Plan provisions,
- o Baseline costs,
- o Initial number of participants
- o Economic assumptions, including
  - -Health care cost trend
  - -Underlying inlfation rates
  - -Interest (discount) rate
  - -Expected long-term rate of return on plant assets
- o Demographic assumptions, including
  - -Retirement rates
  - -Mortality rates
  - -Turnover rates
  - -Dependent enrollment
- o Methodology used in actuarial computer models,
- o Review of sample retiree calculations, and
- o Review of results for reasonableness."

This list of assumptions includes only those "critical" factors which go into the calculation. Moreover, these assumptions, as well as the ones made by GTEC, are anything but certain or non-controversial. Every year, DRA would have to go through a reasonableness review of the actuarial valuation and all the underlying assumptions. After that, since the Z factor adjustment would actually be the difference between the projected future costs under accrual accounting less the costs under cash accounting, DRA would have to examine the latter as well. This analysis would be a phenomenal undertaking considering that the DRA staff has only twenty days to respond to a price cap advice letter filing.

Another probable area of future contention is the ability of Pacific and GTEC to manipulate the actuarial calculations they perform for the IRS and the Commission. GTEC, for example, showed in a data request how it has adapted its actuarial calculation of surplus pension assets depending on the "target" regulatory body. In the data request example, the company reported surplus assets to the Commission that were below the estimate they submitted under IRS/ERISA for the same time period.

Such degree of management control and manipulation would necessitate constant scrutiny from DRA and CACD should the companies be granted Z factor treatment for SFAS No. 106 expenses since Pacific and GTEC could receive revenues based on one calculation, while they could profit from another calculation reported elsewhere. (See Appendix 10.)

Finally, it is doubtful whether the ratepayers would see any benefits through the sharing mechanism resulting from the utilities' prefunding of PBOPs. DRA would have to seek future Z factor adjustments, as many as 40 years removed from the 1993 start-up, to reflect whatever net ratepayer "benefits" may result from the prefunding of PBOPs. These benefits, as previously mentioned, would be uncertain, and highly controversial as well, and certain to be disputed by Pacific and GTEC.

Clearly, then, including PBOPs costs as a Z factor adjustment in Pacific's and GTEC's rates would invite the type of regulatory mess the Commission intended to avoid with NRF. The Commission stated in D.89-10-031 that "[i]deally, our new regulatory framework will move the Commission toward a simpler, more understandable, and low cost regulatory process" (p. 316). In another section of that decision, the Commission pointed out that "we must in all honesty question the adequacy of this type of after-the-fact second guessing [or reasonableness review] in evaluating the...utility operations" (p. 166).

The Commission should not grant Z factor treatment for the prefunding of PBOPs to Pacific and GTEC for it would go against the very nature of the NRF. It would not be logical to expect DRA or CACD to review GTEC's and Pacific's management decisions in every price cap filing when the stated purpose for the NRF was low cost and efficient regulation. DRA would be forced to review all the assumptions and calculations performed in preparing the forecasted PBOPs expenses that determine the Z factor adjustment. Furthermore, logic would require DRA to seek to recovery of whatever ratepayer benefits might be quantifiable, further bogging down the process. The Commission should avoid saddling the NRF with such practices. Pacific and GTEC should manage

their PBOPs expenses without any Commission interference through Z factor adjustments.

D. Examples of Utilities' Control Over Prefunding of PBOPs

As DRA has shown, Pacific and GTEC's management have direct control over the PBOPs costs. Beyond that, both utilities' managements have control over the how much of the PBOPs expenses to prefund, other discretionary funding sources, and the appropriate prefunding vehicle, as well.

For instance, Pacific's management decided to begin funding PBOPs in 1989 via collectively bargained VEBA and non-bargained VEBA trusts. The utility set these trustfunds up so that it could have enough assets to cover the expected impact of the transition costs associated with the start-up of PBOPs accrual accounting in 1993. The exhibits which appear in Appendix 12 of the Division of Ratepayer Advocates' Phase II Reply Comments show Pacific's ability to perform above the benchmark rate of return without any ratepayer funding while already prefunding PBOPs. Thus, Pacific's financial performance has not been negatively affected by prefunding PBOPs.

DRA also believes that both Pacific and GTEC have surplus pension assets available to prefund PBOPs without resorting to rate increases if the management of these utilities so chose. Confidential Appendices 9 and 10 provide evidence on the size and causes of Pacific Bell's and GTEC's pension surpluses. By definition, surplus pension assets are the difference between the value of pension obligations and the value of the accumulated pension assets as of a certain date. The companies' estimates of these surpluses are so enormous that DRA is convinced that it would be unconscionable not to use part of them to prefund PBOPs (see Confidential Appendices 9 and 10). These estimates were derived using different methods in order to demonstrate the ranges that the utilities have to work with. These tabulations

show that the pension surpluses existed before the implementation of the NRF and that they are growing.

Elsewhere, AT&T, a respondent to this proceeding, will be adopting SFAS No. 106 for accounting of PBOPs. Instead of requesting any rate relief, AT&T has transferred surplus pension assets to prefund PBOPs. This action likely reflects the competitive environment in the inter-LATA market, as well as the degree of management control over the PBOPs expenses (See Confidential Appendix 13). In any case, it is obvious that the telecommunications utilities have considerable control over the prefunding of PBOPS, not just the cost level, but the funding of those costs as well. Z factor treatment would eliminate this level of management decision-making, in effect placing the risk of the results of management decicions squarely on the ratepayer shoulders.

E. Conclusion

DRA believes that SFAS No. 106 should not be adopted for regulatory purposes. Should the Commission not adopt this recommendation, then it should still not grant Z factor recovery for the following reasons:

1. Pacific and GTEC have not met their burden of proof to demonstrate that PBOPs costs are beyond their control.
2. PBOPs costs are within management's control.
3. SFAS No. 106 reflects only a change in accounting costs, and not a change in economic costs; therefore, such costs are not disproportionate or significant when compared to the overall economic costs of the utilities.
4. SFAS No. 106 costs are likely captured in the GNPPI, though DRA has not been able to verify GTEC's model.
5. PBOPs costs are contoversial and not easily quantifiable

DRA's recommendation applies to all PBOPs-related expenses, including the "prefunding" addressed in the Phase I Decision No. 91-07-006.

If the Commission adopts DRA's recommendation to use PAYGO accounting to fund PBOPs, then Z factor treatment under the New Regulatory Framework (NRF) would not be required. The telecommunication utilities would have sufficient time, resources, and discretion to pursue prefunding of PBOPs without increases in the rates they charge their customers. Also, no discrete change in regulatory accounting standards would have occurred; therefore, no exogenous event would have taken place requiring Z factor treatment.

Finally, if Z factor recovery is authorized, DRA strongly recommends that Pacific and GTEC be ordered to flow through in rates any benefits of prefunding. It is unfair to expect the ratepayers to rely on the "sharing mechanism" to receive the benefits of prefunding. If the sharing mechanism is relied upon to flow through the benefits of prefunding, the ratepayers will only recieve at most half of the benefits of prefunding, and at worst, none of the benefits. If the ratepyers pay 100% of the costs of prefunding, they should recieve 100% of any realized benefits.

IV. CONCLUSION

SFAS No. 106 should not be adopted for ratemaking purposes. DRA has shown that PAYGO is the most cost-effective option for funding PBOPs obligation while full funding of SFAS No. 106 is the least cost-effective option. Under any funding scenario, DRA's analysis demonstrates that funding PBOPs costs which are not tax-deductible simply makes no sense.

DRA has shown that SFAS No. 106 is an inappropriate standard fo setting rates since the liability computed under SFAS No. 106 is not legally binding, does not reflect an employer's funding obligation, and can be changed at the discretion of managment. Nor will SFAS No. 106 have any effect on the utilities' cash flow or creditworthiness.

If SFAS No. 106 is adopted for ratemaking purposes, either in part or in total, critical monitoring, tracking, and regulatory procedures must be implemented. The PBOPs revenue requirements are just too large, the costs just too speculative, and ability to divert funds to nonPBOPs and nonregulated uses are just too great for DRA's safeguards not to be adopted. To carry out their responsibilities, DRA and the Commission need access to official actuarial reports and analysis on a regular basis. PBOPs accounting and reporting should be segregated between regulated and nonregulated operations. Separate trusts need to be established for regulated and nonregulated operations, and there should be no comingling between these trusts. There should be segregated accounting for active and retiree benefits as well as active and retiree PBOP prefunding. Utilites should report to CACD and DRA any changes in plan design and coverage, and any new legislation affecting their PBOPs arrangements. Finally, utilities should establish separate memorandum accounts to record and track PBOPs costs authorized in rates along with actual expenditures.

Pacific and GTEC should recieve no increases in rates for PBOPs. Pacific and GTEC simply have not met their burden of

proof to show that PBOPs costs are beyond their control. Moreover, as DRA has demonstrated, PBOPs costs are indeed under management's control just like many other labor-related costs. Proof of this can be found in Pacific's annual report to the SEC wherein Pacific announces that it has the power to "amend or terminate" it's PBOPs plans.

If the Commission does authorize Z factor recovery, DRA strongly recommends that Pacific and GTEC be ordered to flow through in rates any benefits of prefunding via an annual Z factor adjustment. It is unfair to expect the ratepayers to rely on the "sharing mechanism" to recieve any benefits of prefunding. Under the sharing mechanism, ratepayers will recieve at most only half the benefits of prefunding, and at worst, none of the benefits. If the ratepyers pay 100% of the prefunding, they should recieve 100% of any realized benefits.

Finally, DRA asks the Commission to take notice of an Exposure Draft issued by the FASB regarding income taxes. The Exposure Draft, if adopted by the FASB, could significantly offset the utilities' PBOPs costs as determined by SFAS No. 106. Therefore, should the Commission adopt SFAS No. 106 for ratemaking, DRA recommends that rates be made subject to refund until the implecations of the Exposure Draft become clear.

APPENDIX 1

"Comparison of Pension Plans
with
Other Postretirement Benefit Plans"

Financial Executives Research Foundation

TABLE 5.1 *Comparsion of Pension Plans with Other Postemployment Benefit Plans*

Measurement Characteristics	Pension Plans	Other Postemployment Benefit Plans	Comments
Plan benefits are definitely determinable.	Yes	No	Pensions are determined under a definite formula. Except for pension plans with automatic cost of living adjustments, the amount of a retiree's monthly benefit is fixed when payments commence. With the exception of death benefits, other postemployment benefits are not precisely determinable until an illness or other event occurs.
Expenditures for benefits actually paid to participants are generally known.	Yes	Yes	Systems exist or can be developed to record data on the expenditures for benefits paid to retirees and other participants.
Economic factors that influence long-term employer cost estimates are closely correlated (e.g., salary increases and investment returns).	Yes	No	While employers can exercise control over salary costs, the costs of other postemployment benefits are influenced by factors outside the control of the employer. Health care inflation has a dramatic impact on the long-term cost of other postemployment benefit plans. This economic phenomenon has no correlation to investment return or other economic assumptions.
Recognition or Attribution Characteristics	**Pension Plans**	**Other Postemployment Benefit Plans**	**Comments**
Specific eligibility criteria exist.	Yes	Yes	
Plan provides benefits that are earned ratably through employee's service period.	Yes	No	Other postemployment benefit plans typically do not provide for periodic vesting and benefits are not tied to length of service. Benefit could be deemed to be "earned" at retirement.
Benefits are vested before retirement.	Yes	Uncertain	The vested status of other postemployment benefits is not clear. See page 52 for discussion of this issue.
Benefits are vested after retirement.	Yes	Uncertain	The vested status of other postemployment benefits is not clear. See page 52 for discussion of this issue.

TABLE 5.1 *Comparsion of Pension Plans with Other Postemployment Benefit Plans (continued)*

Recognition or Attribution Characteristics	Pension Plans	Other Postemployment Benefit Plans	Comments
Increases in real benefit cost after retirement are subject to close employer control.	Yes	No	Health care cost increases after retirement are heavily influenced by health care inflation. Although the employer can control the medical benefits covered under a plan, the utilization of specific coverages or procedures and the costs involved are generally beyond the employer's control. In addition, plans typically are coordinated with Medicare benefits and the employer has no control over future changes in the Medicare laws. On the other hand, an employer can more closely control death benefit costs by changing the plan's schedule of benefits. The incidence of the payment of such benefits is, of course, beyond the employer's control.
Other Characteristics	**Pension Plans**	**Other Postemployment Benefit Plans**	**Comments**
Plan termination is subject to regulatory controls.	Yes	No	See page 52 for discussion of the plan termination issue.
Plan is subject to ERISA funding and benefit guarantee protections.	Yes	No	
Benefits have been held subject to assignment if employee is divorced during active employment.	Yes	Uncertain	
Benefits typically are advance funded.	Yes	Not usually	Relatively few employers advance fund other postemployment benefits.
Timing of accounting expense and tax deduction is generally consistent.	Usually	Not necessarily	Unless funded, expense provisions for other postemployment benefits would not be deductible until paid. Since pension plans are generally funded, expense and tax deductions are generally consistent. Note,

TABLE 5.1 *Comparsion of Pension Plans with Other Postemployment Benefit Plans (continued)*

Other Characteristics	Pension Plans	Other Postemployment Benefit Plans	Comments
			however, that in some instances pension expense may have to be provided for financial reporting purposes even though deductible plan contributions cannot be made if the employer has reached the full funding limitation under the Internal Revenue Code.
Obligation for accumulated benefits is generally included in sale or acquisition negotiations.	Yes	No	Amount of obligations for postemployment benefits is generally not available and frequently had not been considered in the past. There are indications that these obligations are now being considered more frequently in acquisition deliberations.
Expense for plan is typically recognized on accrual basis.	Yes	No	
Obligations are typically disclosures in financial statements.	Yes	No	Pension disclosures are required, but salary increases do not have to be projected in estimating obligations. Obligations for other postemployment benefits have generally not been estimated.
Current and long-term obligations can be substantial.	Yes	Yes	

Measuring the Obligation for Other Postemployment Benefits

The key accounting issue with respect to other postemployment benefits is *should the cost of other postemployment benefits be accrued during the service lives of employees expected to receive those benefits?* Since accrual accounting is dependent upon the cost of other postemployment benefits being measurable with sufficient reliability, it is logical to address the question of measurement first. If a reliable measurement of the obligation can be made, then that amount can either (1) be accounted for on an accrual basis

APPENDIX 2

Comparison of Funding Methods:

Pay-As-You-Go versus Advance Funding

Excerpts from Independent Sources:

1) Employee Benefit Research Institute
2) Financial Executives Research Foundation

MEASURING AND FUNDING CORPORATE LIABILITIES FOR RETIREE HEALTH BENEFITS

AN EBRI-ERF POLICY STUDY

This study was prepared in cooperation with the Employee Benefit Research Institute-Education and Research Fund by the staff of Milliman & Robertson, Inc., in memoriam to Wendell A. Milliman, a founder of the firm. Authors of the study are Phyllis A. Doran, F.S.A., Kenneth D. MacBain, F.S.A., and William A. Reimert, F.S.A., consulting actuaries with Milliman & Robertson, Inc.

EBRI

EBRI-ERF
EMPLOYEE BENEFIT RESEARCH INSTITUTE
EDUCATION AND RESEARCH FUND

TABLE 4

Change in Employer Retiree Health Liabilities As Result of Changes in Key Variables, Based on Current Employees

Variable	Percent Change
Double the rate of early retirement	11%
Increase life expectancy by 1 year	6
Eliminate pre-65 coverage	−22
Increase percentage of spouse coverage payable under other plans from 10% to 20%	−5
Extend coverage of plan: $100 deductible, 80% coinsurance, $500 annual out-of-pocket limit	100
Require retirees to contribute 25% of total cost	−25
For plan requiring 25% contribution from retiree, freeze amount of retiree contribution at time of retirement	20

Prefunding Techniques and Costs

Retiree medical benefits are not generally funded during an employee's working years for various reasons, including the lack of adequate tax incentives. However, there is considerable discussion of the possibility of imposing requirements for employer advance funding of these benefits before retirement.

The cost of funding retiree medical benefits is calculated in this study based on projections of future employee populations for the sample groups. Advance funding methods borrowed from pension practice are compared with current "pay-as-you-go" procedures. These methods produce the annual funding requirements presented in table 5. In this illustration, advance funding costs continue to exceed pay-as-you-go costs even after 50 years for a stable or growing employee population.

If a company were to decline in size, advance funding costs would tend to drop below pay-as-you-go costs. Under such circumstances, pay-as-you-go costs may exceed corporate resources, forcing reductions in retiree benefits. Advance funding costs, on the other hand, would decline at approximately the same rate as the group of active employees, and benefits would be provided to retirees from accumulated funds.

TABLE 5
Cost of Funding Retiree Medical Benefits

Year	Pay-As-You-Go	Pension Funding Methods: Projected Unit Credit	Entry-Age Normal	Aggregate
	annual contribution per active employee			
0	$ 200	$1,100	$1,400	$1,500
10	300	1,500	1,700	1,600
20	800	1,500	1,600	1,500
30	1,500	1,700	1,800	1,500
40	2,600	2,700	3,000	2,800
50	4,300	4,400	4,900	4,700
	fund (millions)			
0	$0	$ 0	$ 0	$ 0
10	0	154	192	193
20	0	375	426	426
30	0	617	668	667
40	0	1,243	1,331	1,273
50	0	2,470	2,649	2,482

Because of the uncertainty of future medical trends, a number of modified advance funding methods have been proposed in other studies of retiree medical benefits. Two of these methods—the Unprojected Unit Credit (No Trend) and Unit Credit with No Trend or Discount Rate—are examined in this study, along with a third method, Projected Unit Credit with Trend Equal to Per Capita GNP Growth Rate. These modified funding methods produce generally lower annual funding costs than full funding methods but higher costs than pay-as-you-go. At year 50, the Unprojected Unit Credit method produces a fund only one-third the size of that produced by using the Projected Unit Credit method.

Benefit Security

The funds developed under the full funding methods generally are sufficient to cover the benefits of existing retirees in five years and future benefits for vested employees (i.e., those eligible to retire) in five to ten years. These funds, however, generally do not reach 100 percent of total accrued benefits for all retirees and employees but stabilize slightly below that level.

Modified advance funding methods generally accumulate funds more slowly; in fact, the Unprojected Unit Credit method does not even

produce sufficient assets to cover 100 percent of benefits for existing retirees.

In the event of cessation of employer operations, the liabilities for employees eligible to retire increase, since these employees will retire at once. Under these circumstances, funds will not go as far in covering the accrued benefits of all employees.

Study Objectives and Methodology

In this study, actuarial techniques are used to analyze advance funding and expensing of retiree medical benefits. Using several model groups, the study estimates the benefit liabilities and examines alternative funding methods under several economic scenarios. In addition, the effects of changes in benefits and possible future policy changes are measured.

The model groups have been chosen to cover a range of employer characteristics (see description below). However, it is not possible to demonstrate the effects of the methods shown under all possible conditions; the samples shown should be considered as illustrations only.

This study provides a framework for evaluating various assumptions and techniques—including some that may not be directly addressed here. The inclusion of any particular assumption or technique does not imply that it is preferable to another; rather, those included have been selected to illustrate a range of possibilities.

Description of Model Groups

Three hypothetical groups form the basis for the calculation of all values presented in this study. The groups were selected from among those presented in *Pension Cost Method Analysis*, a study published by the American Academy of Actuaries Committee on Pension Actuarial Principles and Practices.[3] The Academy study includes population characteristics and projection assumptions for 10 model groups, which are identified as groups A through J. The following groups were selected for use in this study because of their differences in maturity, turnover, and size of retiree population.

Group A: Stable—This represents a reasonably mature and stable group that is projected to continue to grow. It is typical of many large companies.

[3]Committee on Pension Actuarial Principles and Practices, American Academy of Actuaries, *Pension Cost Method Analysis* (Washington, DC: American Academy of Actuaries, 1985).

TABLE 6
Major Characteristics of Model Groups

Characteristics	Group A (stable)	Group F (older)	Group H (new)
Number of employees	10,000	10,000	10,000
average age	36	39	39
average years of service	7	11	4
Number of retirees			
under age 65	604	1,152	0
over age 65	984	1,880	14
total	1,588	3,032	14

Group F: Older, Declining—This represents an older, mature group that is gradually declining. Turnover is high at all ages and durations of employment.

Group H: New—This represents a group formed five years ago with a high average age at employment and relatively high turnover.

Each group has a total of 10,000 active employees initially. Table 6 summarizes the major characteristics of each group. The assumptions used in projecting future populations of these groups are those presented in the Academy study, with a few exceptions (summarized in appendix A).

Study Methodology

This study uses two types of projections:

(1) Closed group projections involve projections of the current population of employees and retirees for each group, without consideration of new hires in future years. Closed group projections are used to derive liability values based on the group as it exists today. Closed group values are useful for testing the effects of changes in benefits or assumptions. In addition, measurements of current accrued and/or vested benefit liabilities, however defined, are based on projections of the closed group.

The values presented in Part One are based on closed group projections.

(2) Open group projections include assumptions regarding future entrants, or new hires. This approach is used to analyze the fund that develops over a period of several years under an advance funding approach.

Part Two presents the results of 50-year open group projections for groups A, F, and H. In these projections, the number of new entrants in each year is based on the annual growth assumption of the group, as presented in table 7.

TABLE 7
Annual Projected Growth Rates

Group	Rate
A (stable)	2%
F (older)	−2%, −7%
H (new)	2%

Group F is projected under two assumptions: a 2 percent annual rate of decline and a 7 percent rate of decline. The latter projection illustrates the effects of funding on a rapidly declining group; at a 7 percent annual rate of decline, Group F reduces to one-half its original size in 10 years.

Chapters VII and VIII analyze the fund buildup that occurs over 50 years for each of these groups under a range of funding methods and economic scenarios.

Issues Not Covered in This Study

This study is focused primarily on the measurement and funding issues surrounding retiree medical plans. Additional issues, also relevant and important in evaluating retiree medical programs in the U.S., include

(1) legal framework for plans,

(2) impact on the U.S. economy if tax-sheltered funding is required, and

(3) possibility of an expanded program of government-provided benefits.

For a discussion of these and other issues, see the following EBRI publications:

Financing the Elderly's Health Care (forthcoming)
The Changing Health Care Market (1987)
Medicare Reform: The Private-Sector Impact (1985)
The Changing Profile of Pensions in America (1985)
Retirement Security and Tax Policy (1984)

(2) Aggregate method contributions most closely resemble those of the Entry Age Normal—Minimum basis. While slightly higher initially, contributions under the Aggregate method fall slightly below the Entry Age Normal contributions in later years.

(3) After the first 10 years, there is little variation in the contributions under any of these methods.

The annual contributions that develop under the three modified advance funding methods are summarized in table VII.2. Some general patterns illustrated in table VII.2 also apply to the other model groups and to other trend scenarios, as follows.

(1) The Unprojected Unit Credit method has the lowest contributions initially; after 30 to 40 years, however, contributions under this method are slightly higher than under the other methods.

(2) The contributions under all three methods are fairly close after 30 years and are quite similar to those under the Projected Unit Credit method. (The funds that accumulate under these methods vary significantly, however, as discussed below.)

Comparison with Pay-As-You-Go Funding

Pay-as-you-go funding refers to the payment of benefit costs as they are incurred. Annual payments are equal to the current year's benefit payments, and no fund is accumulated.

TABLE VII.1

Comparison of Annual Contributions: Full Funding Methods, Group A (Stable), Medium Trend Scenario (millions)

	Entry Age Normal		Projected Unit Credit		
Year	Maximum	Minimum	Maximum	Minimum	Aggregate
0	$ 20	$ 14	$ 16	$ 11	$ 15
5	27	21	21	16	20
10	18	21	16	18	19
15	20	20	19	19	19
20	24	24	23	23	22
25	28	28	27	27	25
30	32	32	30	30	27
35	46	46	42	42	42
40	66	66	60	60	61
45	93	93	84	84	88
50	131	131	119	119	126

Note: Minimum contributions exceed maximum contributions in some years due to effects of full funding limitations.

TABLE VII.2

Comparison of Annual Contributions: Modified Advance Funding Methods, Group A (Stable), Medium Trend Scenario (millions)

Year	Unprojected Unit Credit		No Trend or Discount Rate		Trend Equal to Per Capita GNP* Growth Rate	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
0	$ 3	$ 2	$ 9	$ 6	$ 6	$ 4
5	5	4	12	9	9	7
10	6	6	14	14	11	11
15	9	10	17	21	14	16
20	14	15	23	29	20	24
25	21	22	28	33	27	31
30	31	31	30	30	32	36
35	44	44	43	43	42	42
40	62	62	60	60	60	60
45	87	87	85	85	84	84
50	122	122	120	120	119	119

*Gross National Product.

Note: Minimum contributions exceed maximum contributions in some years due to effects of full funding limitations.

Charts VII.1a through VII.1d compare annual pay-as-you-go costs with the annual contributions under the Projected Unit Credit—Minimum method for each group under the medium trend scenario. The following patterns can be observed from these charts.

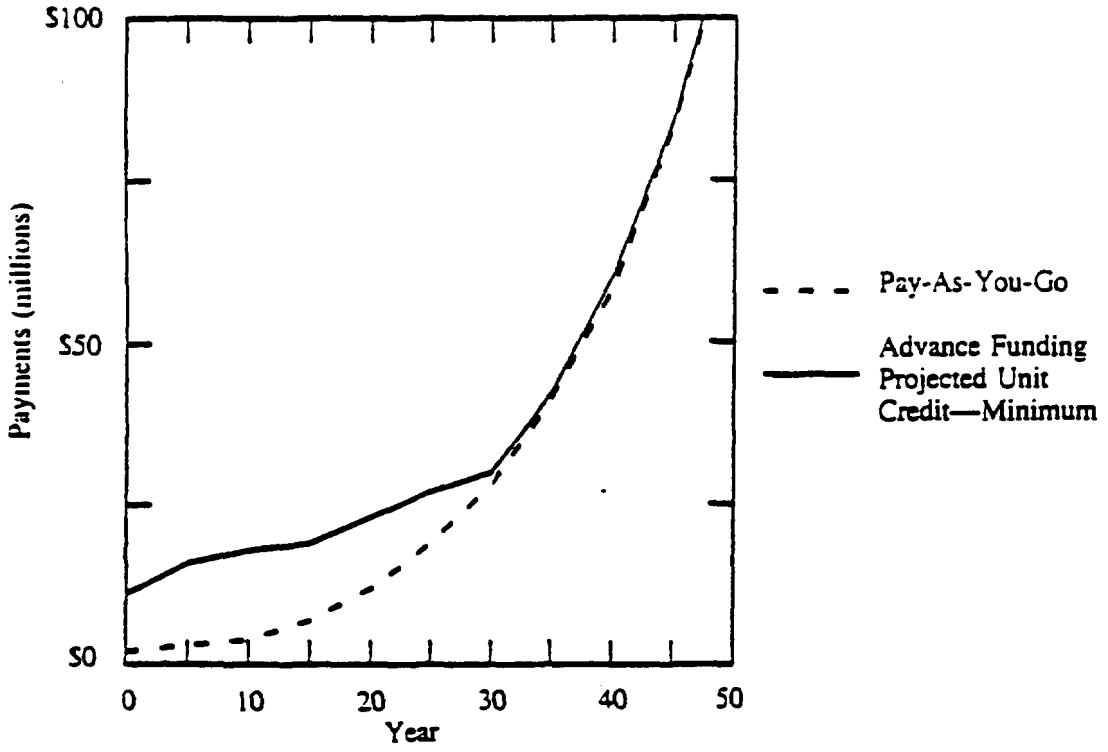
(1) For groups A and H, which are growing at an annual rate of 2 percent, pay-as-you-go payments approach the level of the advance funding contributions but do not exceed them within the 50-year period.

(2) For Group F, which is projected at two annual rates of decline, pay-as-you-go payments begin to exceed advance funding payments after 15 to 20 years; thereafter, pay-as-you-go payments grow rapidly in relation to advance funding contributions.

At the end of 50 years, funds of $2.5 billion and $3.4 billion have accumulated under the advance funding approach for groups A and H, respectively; no fund has accumulated under the pay-as-you-go approach. The liabilities for retirees and vested employees combined are $1.9 billion for Group A and $2.6 billion for Group H. For Group F, a fund of $0.1 to $0.4 billion has accumulated after 50 years under the advance funding approach.

CHART VII.1a

Comparison of Pay-As-You-Go and Full Funding Methods Group A (Stable—2% Growth): Medium Trend Scenario



If pay-as-you-go funding is used until year 50, for all groups the cost to begin funding in year 50 would be about three times the funding cost that would result in that year if funding was started in the first year of the projection.

Fund Accumulation

The fund that accumulates under an advance funding method is equal to the contributions made, plus investment earnings on the fund, less benefits paid out. Under a funding method that has higher contributions in the earlier years, the fund builds more rapidly; as a result, annual investment earnings are higher than under a method that funds more slowly. Over time, the annual contributions under both types of methods will tend to grow closer as the investment earnings play an increasing role in the fund accumulation of the more rapid method.

Table VII.3 and chart VII.2 compare the fund buildup that occurs for Group A under the three full funding methods. They illustrate the